



## **2009 Annual Drinking Water Quality Report For The Town of Morehead City**

PWS ID# 04-16-015

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies.

### **What EPA Wants You to Know:**

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Town of Morehead City is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

## **When You Turn on Your Tap, Consider the Source:**

Our water source is four wells drawing water from the Castle-Hayne aquifer.

## **Source Water Assessment Program (SWAP) Results:**

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for the Town of Morehead City was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area.). The assessment findings are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating	SWAP Report Date
Well # 1	Moderate	3/2007
Well #2	Moderate	3/2007
Well #3	Moderate	3/2007
Well #4	Low	3/2007
Well #5	Moderate	3/2007

The complete SWAP Assessment report for the Town of Morehead City may be viewed on the Web at:  
<http://www.deh.enr.state.nc.us/pws/swap> Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email request to [swap@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name, PWSID, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-715-2633.

It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the systems’ potential to become contaminated by PCS’s in the assessment area

## **Violations that Your Water System Received for the Report Year:**

During 2009, or during any compliance period that ended in 2009, we had no violations of State or Federal drinking water standards.

We exceeded the Action Level for Copper during our Lead and Copper Testing in December 2008. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson’s disease should consult their personal doctor. We have completed our initial corrosion control testing and plan to include corrosion control treatment in the new water treatment plants currently being designed and constructed. In addition to corrosion control treatment, the planned Water Treatment Plants will include dissolved organic carbon removal, which will help lower our Total Trihalomethanes, and softening, which will allow our residents to turn off their home water softeners. Once the Water Treatment Project is complete, our drinking water will be of superlative quality.

Morehead City is looking for volunteers to participate in future lead and copper sampling rounds – we are targeting homes built between 1983 and 1985 with copper pipes and lead solder joints. Please contact us at (252) 726-6848 Extension 133 if you are interested in participating.

## **What If I Have Any Questions Or Would Like to Become More Involved?**

If you have any questions about this report or concerning your water, please contact the Town of Morehead City Public Utilities Department at (252) 726-6848 Extension 133. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled Town Council Meetings. They are held on the second Tuesday of each month in the Town Council Chambers on the second floor of 202 South 8<sup>th</sup> Street (Police Department).

## **Water Quality Data Table of Detected Contaminants:**

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2009.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

**Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.**

### Important Drinking Water Definitions:

*Not-Applicable (N/A)* – Information not applicable/not required for that particular water system or for that particular rule.

*Non-Detects (ND)* - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

*Parts per million (ppm) or Milligrams per liter (mg/L)* - One part per million corresponds to one minute in two years or a single penny in \$10,000.

*Parts per billion (ppb) or Micrograms per liter (ug/L)* - One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

*Action Level (AL)* - The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.

*Treatment Technique (TT)* - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

*Maximum Residual Disinfection Level Goal (MRDLG)* – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

*Maximum Residual Disinfection Level (MRDL)* – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

*Maximum Contaminant Level (MCL)* - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

*Maximum Contaminant Level Goal (MCLG)* - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Extra Note: MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

**Microbiological Contaminants (Sample Dates 1/2009-12/2009):**

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	1	0	One positive monthly sample	Naturally present in the environment

**Inorganic Contaminants:**

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low      High			Likely Source of Contamination
Chloramine (ppm)	1/2009-12/2009	N	2.63	0.40-3.90	MRDLG =4	MRDL =4	Water additive used to control microbes
Fluoride (ppm)	1/2009-12/2009	N	0.95	0.30-1.20	MCLG =4	MCL =4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

**Lead and Copper Contaminants:**

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	12/2008	1.63	13	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) (90 <sup>th</sup> percentile)	12/2008	ND	1	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

*Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).*

**Disinfectants and Disinfection Byproducts Contaminants (Sample Date 3, 5, 8 and 11, 2009):**

Contaminant (units)	MCL/MRDL Violation Y/N	Your Water (AVG)	Range Low      High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	N	14	8-28	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	N	16	7-34	N/A	60	By-product of drinking water disinfection

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer. We have lowered these levels within our water system and as previously noted are working to eliminate the organic precursors for these disinfection byproducts.

Secondary Contaminants, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic contaminants normally do not have any health effects and normally do not affect the safety of your water.

**Secondary Contaminants:**

Contaminant (units)	Sample Date	Your Water	Range Low/High	Secondary MCL
Cyanide (ppm)	9/2007	0.018	ND-0.07	0.2
Iron (ppm)	9/2007	0.057	ND-0.167	0.3
Sodium (ppm)	9/2007	9.95	8.64-11.2	N/A
PH (standard units)	9/2007	7.05	7.0-7.14	6.5 to 8.5

